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Jan Van Sinderen

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NXP, B.V.

NXP INTELLECTUAL PROPERTY & LICENSING

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SAN JOSE, CA 95131

EXAMINER

NGUYEN, DUC M

ART UNIT

PAPER NUMBER

2618

NOTIFICATION DATE

DELIVERY MODE

12/09/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,316	<b>Applicant(s)</b> VAN SINDEREN ET AL.	
	<b>Examiner</b> DUC M. NGUYEN	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6,8 and 9 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This action is in response to applicant's response filed on 9/29/10. Claims 1-9, 11-16 are now pending in the present application. **This action is made final.**

#### ***Response to Amendment***

1. The amendment filed 11/16/09 is objected to under 35 U.S.C. 132(a) because it introduces new matter (claim 11) into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

“the mixer-circuit and polyphase filter being configured and arranged to suppress at least a portion of one of the audio and the video data signal from at least one of said output signals”.

Here, although the specification discloses “unwanted signals” are suppressed, there is no disclosure that would describe or mention “unwanted signals” as “at least a portion of one of the audio and video data signal”.

Applicant is required to cancel the new matter in the reply to this Office Action.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim **11** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 11, the claim recites the limitation "suppress at least a portion of one of the audio and the video data signal from at least one of said output signals", this limitation contains new subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

### ***Claim Rejections - 35 USC 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **1, 11, 15** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Lee** (US Pat. Number **6,483,355**).

Regarding claim **1**, **Lee** teaches a mixer-system comprising:

an amplitude detector (see Figs. 7-8 and col. 7, lines 55-57 regarding peak detector 746a);

a mixer-circuit including:

at least a first mixer and a second mixer configured to frequency translate signals comprising at least one of audio information and video information (see Fig. 7 regarding mixers 720), and where the receiver would implicitly receive at least one of audio information and video information as claimed; and

a first forward circuit path coupled to an output of the first mixer, and including an amplifier-circuit having a gain control input coupled to an output of the amplitude detector (see Fig. 7 regarding amplifier circuit 740A); and

a second forward circuit path coupled to an output of the second mixer, including an amplifier-circuit having a gain independent of the amplitude detector (see Fig. 7 regarding amplifier circuit 740B, which is clearly not depend on the amplitude (peak) detector 746a). Similarly, the gain of amplifier circuit 740A would not depend on the amplitude (peak) detector of amplifier circuit 740B; and

wherein the mixer system is configured to perform amplitude corrections during said frequency translating of said signals (see Fig. 7 and ), where the feedback signal applied to the VGAs (see col. 8, lines 15-21) would either increase or decrease amplitude of the signal in amplifier circuits 740, and would “perform amplitude corrections during said frequency translating of said signals” as claimed ;

Therefore, the claimed limitations are made obvious by Lee.

Regarding claim **11**, **Lee** discloses an apparatus comprising an oscillator LO, an amplifier circuit (compensator circuit 50) being connected between the polyphase filter 760 and the at least two mixers 720 (see Fig. 7 and col. 6, lines 53-65), which mixer-system comprises a mixer- circuit with at least two mixers for frequency translating

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signals comprising an amplitude detector (see Fig. 7 regarding peak detectors 746 and col. 7, lines 34-57) for making amplitude corrections (see Figs. 7-8 regarding first AGC loop 740 col. 8, lines 15-21) for at least one output signal of said mixer-circuit, wherein said amplitude corrections are made during said frequency translating of said signals (see Figs. 7-8 regarding feedback feature of first AGC loop 740), and the mixer-circuit and polyphase filter being configured and arranged to suppress unwanted signal from at least one of said output signals (see Fig. 8 and col. 8, lines 5-8 regarding Gm-C channel selection filter which would “suppress unwanted signals” such as adjacent channel blocker or image frequency signals).

However, **Lee** does not disclose the receive RF signal comprises audio and video information. However, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations *Ex parte Masham 2* USPQ2d 1647 1987).

Regarding claim **15**, the claim is rejected for the same reason as set forth in claim 1 above. However, **Lee** does not disclose the receive RF signal comprises audio and video information. However, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations *Ex parte Masham 2* USPQ2d 1647 1987).

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6. Claims **12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Lee** in view of **Soltanian** (US Pat. Number **6,700,514**).

Regarding claim **12**, **Lee** would teach all the claimed limitations (see Figs. 7-8 and col. 7, line 34-col. 8, line 21) except for utilizing a non-differential signaling instead of a differential signaling for mixers and VGAs. However, utilizing a differential signaling or non-differential signaling would be an obvious design choice as disclosed by **Soltanian** (see col. 6, lines 15-28). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Lee** to utilize a differential signaling as suggested by **Soltanian**, thereby providing each amplifier circuit having at least a first input and a first output coupled to each other via a first adjustable feedback-gain element (Fig. 7, DC gain adjustment of VGA3 via loop filter), and having at least a second input and a second output coupled to each other via a second adjustable feedback-gain element (Fig. 7, DC offset canceling loop) as claimed, as an alternative of obvious design choice, for utilizing the advantage of differential signaling processing over non-differential processing such as noise cancellation benefit.

Therefore, by simply providing a differential signaling for mixers and VGAs in Fig. 7 of **Lee**, the claimed limitations are made obvious by **Lee** in view of **Soltanian**.

Regarding claim **13**, the claim is rejected for the same reason as set forth in claim 12 above. In addition, **Lee** as modified for a differential signaling would teach at least one output coupled to a control input of the first adjustable feedback-gain element as claimed (see Fig. 7 regarding DC gain adjustment of VGA3 via loop filter 746c).

Regarding claim **14**, the claim is rejected for the same reason as set forth in claim 13 above. In addition, **Lee** as modified for a differential signaling would teach at least one output coupled to said second adjustable feedback-gain element as claimed (see Fig. 7 regarding DC offset canceling loop).

7. Claims **1**, **15** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Pickett et al** (US Patent Number **6,771,945**) in view of **Ichihara** (US Pat. Number **7,206,360**).

Regarding claim 1, **Pickett** teaches a mixer-system comprising:

an amplitude detector (see Fig. 1 regarding amplifier 50 and col. 4, lines 16-20), where it is clear that amplifier 50 would be used to detect the offset (or imbalance or difference) of the differential signals and would work in the similar way to the amplitude comparison circuit 21 having amplitude detectors 51, 52 as disclosed by **Ichihara** (see Fig. 4 and col. 5, lines 50-62, noting that rectifier is an amplitude detector);

a mixer-circuit including:

at least a first mixer and a second mixer configured to frequency translate signals comprising at least one of audio information and video information (see Fig. 1 regarding mixer 12 which would obviously teach two mixers in order to produce two differential output signals), and where the receiver would implicitly receive at least one of audio information and video information as claimed; and

a first forward circuit path coupled to an output of the first mixer, and including an amplifier-circuit having a gain control input coupled to an output of



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the amplitude detector (see Fig. 1 regarding amplifier 28 and col. 2, lines 34-37, col. 4, lines 23-32); and

a second forward circuit path coupled to an output of the second mixer, including an amplifier-circuit having a gain independent of the amplitude detector (see Fig. 1 regarding amplifier 18 and col. 2, lines 23-25, which is clearly not depend on the amplitude detector) ; and

wherein the mixer system is configured to perform amplitude corrections during said frequency translating of said signals (see col. 4, lines 23-40), where the feedback signal applied to the negative input of amplifier 28 would increase or decrease amplitude of the signal in amplifier chain 15, and would “perform amplitude corrections during said frequency translating of said signals” as claimed ;

Since one skilled in the art would recognize that the output amplitude/strength of a signal can be measured or represented either in current, voltage or power, and since amplitude detector is just a measurement of a signal strength in voltage, it would have been obvious to one skilled in the art at the time the invention was made to modify **Pickett** to replace the trans-conductance amplifier 50 with the amplitude comparison circuit 21 in Ichihara, thereby providing an amplitude detector as claimed, as an alternative of obvious design choice for detecting an offset signal via a voltage detection circuit.

Regarding claim **15**, the claim is rejected for the same reason as set forth in claim 1 above. However, **Pickett** does not disclose the receive RF signal comprises audio and video information. However, it has been held that a recitation with respect to

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the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations *Ex parte Masham* 2 USPQ2d 1647 1987).

8. Claims **2-5** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Pickett** in view of **Ichihara** and further in view of **Lee** (US Pat. Number **6,483,355**).

Regarding claim **2**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, **Pickett** as modified in view of **Ichihara** would teach said amplitude detector comprises at least two inputs coupled to at least two outputs of said mixer-circuit and at least one output coupled to at least one control input of said mixer-circuit as claimed (see Ichihara, Fig. 4).

As to the limitation regarding a polyphase filter, **Lee** teaches a polyphase filter coupled to at least one output of the amplifier circuit for suppressing data in at least one of the output signals of amplifier circuit (see Fig. 7 and col. 6, lines 53-65). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Pickett** to utilize a poly-phase filter for suppressing adjacent interference signals as suggested by Lee, for further improving the performance of the system.

Regarding claim **3**, the claim is rejected for the same reason as set forth in claim 2 above. In addition, **Pickett** as modified in view of **Ichihara** would teach said amplitude detector comprises at least two level detectors each comprising an output coupled to an input of an amplifier (see Ichihara, Fig. 4 and col. 5, lines 50-62).

Regarding claim **4**, the claim is rejected for the same reason as set forth in claim 2 above. In addition, **Picket** as modified in view of **Ichihara** would teach a further amplitude detector and a common mode correction as claimed (see Pickett, Fig. 1 regarding the common-mode correction amplifiers 42, 44 and amplitude comparison amplifier 48 and col. 3, lines 28-67).

Regarding claim **5**, the claim is rejected for the same reason as set forth in claim 4 above. In addition, **Picket** as modified in view of **Ichihara** would teach amplitude detectors (Ichihara's teaching) with input and output connections as claimed (see Pickett, Fig. 1 regarding common mode correction amplifiers 42, 44 and amplitude comparison amplifier 48 for their input/output connections).

9. Claim **11** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Ichihara** in view of **Lee**.

Regarding claim **11**, **Ichihara** would obviously teach all the claimed limitations (see Figs. 1-2, 4 and their related disclosure) except for a polyphase filter. However, **Lee** teaches a polyphase filter coupled to at least one output of the amplifier circuit for suppressing adjacent interference signals in at least one of the output signals of amplifier circuit (see Fig. 7 and col. 6, lines 53-65). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Ichihara** to utilize a poly-phase filter for suppressing adjacent interference signals as suggested by **Lee**, for further improving the performance of the system.

***Allowable Subject Matter***

10. Claims **6, 8-9** are allowed.
11. Claim **7** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

12. Applicant's arguments with respect to claims 1-9, 11-16 have been considered but are moot in view of the new ground(s) of rejection.

In the Remark, Applicant contends that

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. \_\_\_, \_\_\_, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval).

Although the current Office Action provides multiple rejections for many of the claims, it does not appear that any of the rejections include an articulated reasoning in support of the conclusion of obviousness. For example, in rejecting claims 12-14 the Office Action states, without support, that using the teachings of the secondary '514 reference would be an obvious design choice, and it would be therefore obvious to modify the primary '355 reference.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir.

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1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, **Soltanian** clearly teaches that utilizing a differential signaling or non-differential signaling would be an obvious design choice (see col. 6, lines 15-28). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Lee** to utilize a differential signaling as an alternative of obvious design choice, for utilizing advantages of differential signaling processing over non-differential processing such as noise cancellation benefit.

Similarly, in rejecting claims 1-5 and 15 over the '945 reference in view of at least the '360 reference, the Office Action attempts to support a finding of obviousness by stating it would have been obvious to modify the primary '945 reference as claimed "as an alternative of obvious design choice." None of the Office Action's assertions of design choice are supported in the Office Action. Nor do the asserted modifications appear to fall within the recognized rationale for a design choice modification outlined in M.P.E.P. §2144.04. Instead, the Office Action appears to be attempting to support an assertion of obviousness based on the mere fact that various prior art references teach different aspects of the claimed invention. However, the Supreme Court has held that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-419 (U.S. 2007). Accordingly, the § 103(a) rejections are improper and should be withdrawn.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case,

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since one skilled in the art would recognize that the strength of a signal can be measured or represented either in current, voltage or power, and since amplitude detector is just a measurement of a signal strength in voltage, it would have been obvious to one skilled in the art at the time the invention was made to modify **Pickett** to utilize an amplitude detector as claimed, as an alternative of obvious design choice for detecting the strength a signal.

Applicant further traverses the § 103(a) rejection of claims 1 and 15 over the '355 reference for lack of correspondence. For example, the '355 reference does not teach the claimed invention "as a whole" (§ 103(a)) including aspects regarding, e.g., the output of an amplitude detector coupled to the gain control input of an amplifier-circuit. Instead, the '355 reference teaches the output of the asserted amplitude detector is coupled to a charge pump 746b and the asserted gain control input is connected to a loop filter 746c. Because neither reference teaches aspects of the claimed invention directed to a gain control input of an amplifier coupled to the output of an amplitude detector, no reasonable interpretation of the asserted prior art, taken alone or in combination, can provide correspondence. Accordingly, the § 103(a) rejection of claim 1 fails and Applicant requests that it be withdrawn.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., coupled amplitude detector **directly** to the amplifier) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Here, the '355 reference clearly teaches the output of the asserted amplitude detector is coupled to the gain control input via a charge pump 746b and the asserted gain control input is connected to a loop filter 746c.

Further, just for the sake of arguments, with the broadest reasonable interpretation, the charge pump 746b and loop filter 746c can also be considered as

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part of an amplitude detector because their function is just to store (charge pump function) and smooth (filter's function) the output of peak detector.

Applicant further traverses the § 103(a) rejection of claim 11 over the '355 reference for lack of correspondence. For example, the '355 reference does not teach the claimed invention "as a whole" (§ 103(a)) including aspects regarding, e.g., an amplifier with at least a first input and a first output coupled to each other via a first adjustable feedback gain element. In order to properly assert correspondence, "the elements must be arranged as required by the claim." M.P.E.P. § 2131. The rejection presented in the Office Action fails to assert correspondence to aspects of an adjustable feedback gain element connected between the input and output of an amplifier. Additionally, the embodiment of the '355 reference in the cited FIG. 7 does not appear to include a feedback loop between an output and an input of an amplifier. Accordingly, the '355 reference lacks correspondence and the § 103(a) rejection of claim 11 is improper and should be withdrawn.

In response, the examiner asserts that since "coupled" does not mean "a direct connection", the '355 reference **does** teach the claimed invention "as a whole" (§ 103(a)) including aspects regarding, e.g., an amplifier (Figs. 7-8, VGA3) with at least a first input and a first output (see Figs. 7-8, VGA3) coupled to each other via a first adjustable feedback gain element (see Figs. 7-8 regarding refs. VGA7, 746a, 746b, 746c) as claimed. Note that the gain of VGA7 is adjustable and that "coupled" does not mean "a direct connection".

Here is another way of interpreting the limitation "an amplifier (Figs. 7-8, VGA7) with at least a first input and a first output (see Figs. 7-8, VGA7) coupled to each other via a first adjustable feedback gain element (see Figs. 7-8 regarding refs. VGA3, 746a, 746b, 746c). Note that the gain of VGA3 is adjustable and that "coupled" does not mean "a direct connection".

Applicant further traverses the § 103(a) rejection of claims 12-14 because the cited '355 reference either alone or in combination with the '514 reference lacks correspondence to the claimed invention. For example, neither of the asserted references teaches the claimed invention "as a whole" (§ 103(a)) including aspects regarding, e.g., a first input and a first output of an amplifier-circuit coupled to each other via a first adjustable feedback-gain element, and a second input and a second output of the amplifier circuit coupled to each other via a second adjustable- feedback gain element. More specifically,

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the '355 reference does not teach claimed aspects directed to an amplifier-circuit having a feedback loop between the output of the amplifier circuit and the input of the amplifier circuit. Because neither reference teaches aspects of the claimed invention directed to the feedback gain elements situated as claimed, no reasonable interpretation of the asserted prior art, taken alone or in combination, can provide correspondence. Accordingly, the § 103(a) rejection of claims 12-14 fails and Applicant requests that it be withdrawn.

Further, the Office Action, on page 6, fails to assert correspondence to the limitations of claim 12. Instead, the Office Action states, that the '355 reference "would teach all the claimed limitations (see Figs. 7-8 and Col. 7:34-Col. 8:21) except for utilizing a non-differential signaling instead of a differential signaling for mixers and VGAs." Such a rejection fails to provide enough detail for the Applicant to ascertain the propriety of the asserted rejection. For example, it is unclear to Applicant what the Office Action is attempting to assert as the input and output of the amplifier circuit, as well as the adjustable feedback-gain element. Accordingly, the § 103(a) rejection of claims 12-14 is improper and should be withdrawn.

In response, the examiner asserts that since "coupled" does not mean "a direct connection", the '355 reference **does** teach the claimed invention "as a whole" (§ 103(a)) including aspects regarding, e.g., an amplifier with at least a first input and a first output coupled to each other via a first adjustable feedback gain element as claimed (see Figs. 7-8 regarding amplifier chain 740A, 740B), for the same interpretations as outlined above regarding "amplifier with at least a first input and a first output coupled to each other via a first adjustable feedback gain element".

As for the limitation "at least a second input and a second output **coupled** to each other via a second adjustable feedback gain element", the '355 reference, as modified for processing a differential signal, would teach the second path of the differential signal, the input/output terminals of a VGA amplifier for the second path would read on the claimed "a second input and a second output", where the DC offset cancelling loop and at least one VGA would read on the claimed "a second adjustable feedback gain element" with similar interpretations as outlined above regarding "amplifier with at least a first input and a first output coupled to each other via a first adjustable feedback gain element".



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Applicant respectfully traverses the § 103(a) rejection of claims 1-5 and 15 over the '945 reference and the '360 reference because the asserted combination of references would be inoperable. Consistent with the recent Supreme Court decision, M.P.E.P. § 2143.01 states that "[i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." Citing *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984); see also *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (U.S. 2007). ("[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be non-obvious."). The Office Action's proposed modification to the '945 reference replaces the DC offset detection correction circuit with the amplitude detection circuit of the '360 reference. The intended purpose of the '945 reference and the asserted component 50 is DC offset correction. See, e.g., Col. 1:5-7 (the field of invention includes the "method for reducing DC offsets") and Col. 4:16-39. The amplitude detection circuit of the '360 reference rectifies the signal provided to the circuit. A rectified signal no longer conveys DC offset information because the negative signal values are rectified. Therefore, the proposed modification would no longer compensate for DC offset. Accordingly, the '945 reference would be inoperable for its intended purpose. See, e.g., Col 1:5-7 ("method for reducing DC offsets"). Accordingly the § 103 (a) rejections of claims 1-5 and 15 are improper and should be withdrawn.

Applicant further traverses the § 103(a) rejection of claim 1-5 and 15 because the Office Action fails to provide a *prima facie* case of obviousness. The Office Action fails to provide proper motivation to combine the cited references as asserted, contrary to the requirements of M.P.E.P. § 2143.01, e.g., there must be a reason to implement a "design choice". Accordingly the rejection is improper and should be withdrawn.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, since one skilled in the art would recognize that the strength of a signal can be represented either in current, voltage or power, and since amplitude detector is just a measurement of a signal strength in voltage, it would have been obvious to one skilled in the art at the time the invention was made to modify **Pickett** to replace the trans-conductance amplifier 50 with the amplitude comparison circuit 21 in **Ichihara**, thereby

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providing an amplitude detector as claimed, as an alternative of obvious design choice for detecting an offset signal via a voltage detection circuit. Therefore, the proposed modification would still compensate for DC offset of the signal.

In fact, the common mode in Ichihara's reference is a modified version of the common mode in Pickett's reference, where the negative input terminals of amplifiers 42 and 44 in Pickett's reference (see col. 4, lines 36-38 regarding "the common mode loop is attempting to make the DC offsets equal but opposite") would correspond to the positive and negative outputs of the integration circuit 20 in Ichihara's reference, the amplifiers 42, 44 would correspond to VGAs 17, 18 in Ichihara's reference. Therefore, when modifying the differential mode in Pickett, the trans-conductance amplifier 50 would correspond the amplitude comparison circuit 21 in Ichihara's reference.

Applicant respectfully traverses the newly presented § 112(1) rejection of claim 11, as well as the assertion that suppression of a video data signal constitutes new matter. Support for the limitation at issue can be found in Figures 1 and 4, as well as paragraphs 0039 and 0041 of Applicant's published application. The Office Action acknowledges that the Specification supports the suppression of unwanted signals. Further, Applicant discusses translation of signals comprising audio and video information throughout the Specification. Paragraph 0039 discusses, with respect to Fig. 1, the use of mixer block 3 to frequency translate signals including audio/video information received by various devices, such as a mobile phone, that do not necessarily require or use both audio and video information. Accordingly, one of skill in the art, taking the specification as a whole, would understand that one unwanted signal contemplated was a video data signal.

Notwithstanding, and in an attempt to facilitate prosecution, Applicant has amended claim 11. Support for the amendment can be found in paragraph 0041 of the published application, for example, disclosing suppression of the unwanted portion of a signal. Further, there is support throughout the specification for audio and/or video data signals. Accordingly, Applicant requests the § 112(1) rejection for lack of written description, as well as the new matter rejection, be withdrawn.

In response, the examiner asserts that "suppression of the unwanted portion of a signal" does not means "suppress at least a portion of one of the audio and the video data signal" as claimed.

For foregoing reasons, the examiner believes that the pending claims (1-5, 11-15) are not allowable over the cited prior art.

***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. **Any response to this final action should be mailed to:**

Box A.F.

Commissioner of Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**or faxed to:**

(571) 273-8300 (for **formal** communications intended for entry)

(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window,  
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893, Monday-Thursday (9:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Duc M. Nguyen/

Primary Examiner, Art Unit 2618

Dec 3, 2010